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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,471	02/24/2004	Takuji Kato	14225-038001 / F1040007US	8555
26211	7590	09/07/2005	EXAMINER	
FISH & RICHARDSON P.C. P.O. BOX 1022 MINNEAPOLIS, MN 55440-1022			CLARK, SHEILA V	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 09/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/785,471

Applicant(s)

KATO ET AL.

Examiner

S. V. Clark

Art Unit

2823



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Claims 17, 18, 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The features in these claims should be more clearly defined. In claim 17 the "bridge" has not been clearly defined. A "bridge" usually crossed over an component or obstacle. The claims on only define the "bridge" as connecting to semiconductor elements together but fails to recite the means needed to define a bridge. It is therefore it is unclear what is meant by a "bridge".

Claim 22 states a method of fixing by a "reflow"?

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 12-16, 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Utsumi.

Utsumi shows in figures 3 and 4 a first semiconductor element 10 sealed by a sealing resin wherein figures 3 and 4 show a cavity portion (shown as a cut out in figures 3 and 4) is provide in sealing resin 1 and a second semiconductor element 11 stored in the cavity window portion (see col. 6, lines 32-33).

Said elements are taught to be electrically connected.

Connection terminals 2 are shown in figure 1 in a peripheral portion of the cavity and the second element 10 is shown electrically connected to said terminals in a face down manner.

The first element is a semiconductor control element (i.e. signal processing) and the second element is a memory element.

A circuit device comprising an island 13 (i.e. circuit board) on which in which a first semiconductor element 10 is shown. Figure 4 shows external terminals from said circuit element connected to circuit patterns or leads (not labeled) shown extending around the island but described in col.5, line 64 ( " printed circuit patterns"). Sealing resin and second circuit element have been discussed supra.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 20, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Utsumi in view of and Yoshikawa et al.

Utsumi shows in figures 3 and 4 a first semiconductor element 10 sealed by a sealing resin wherein figures 3 and 4 show a cavity portion (shown as a cut out in figures 3 and 4) is provide in sealing resin 1 and a second semiconductor element 11 stored in the cavity window portion (see col. 6, lines 32-33).

Connection terminals 2 are shown in figure 1 in a peripheral portion of the cavity and the second element 10 is shown electrically connected to said terminals in a face down manner.

The method steps of sealing, storing and placing are inherently provided as described above in Utsumi.

Further chips are often sometimes several times before packaging in the wafer stage, after singulation and also during the package stage, so it would have been obvious to one having ordinary skill in this art that one chip could be tested before another in or out of the package.

Reflow processes are typically performed to attach chips to substrates. Yoshikawa et al teaches the use of reflow to attach chips to substrates. It would have been therefore considered obvious to one having ordinary skill in this art that the chip of Utsumi could be attached by reflow as Utsumi failure to limit his invention to a specific chip attachment is deemed to suggest use of conventional means such as reflow.


Claims 12-22 are rejected.

Applicant's arguments filed 6-20-05 have been fully considered but they are not persuasive. Many of the claims continue to be rejected by Utsumi. The claims fail to isolate the "cavity" as being a separate component from the whole of the sealing resin. The "cavity" recited in the claims could be one whole cavity located in the sealing resin as Utsumi shows. The claims further fail to limit only one element in the cavity or isolated one element from the other. The first element is sealed by the resin which has a cavity which may store both the first and second element.

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The " bridge" features in the claims should be more clearly defined.

Any inquiry concerning this communication should be directed to S. V. Clark at telephone number (571) 272-1725.



S. V. Clark  
Primary Examiner  
Art Unit 2823

September 5, 2005